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Resistant Starch Can Help You Lose Weight Overnight

Ameer Rosic Friday April 18th 2014

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What is resistant starch? And how can it help you lose weight? Discover more with this article!

Resistant starch is a type of starch that isn't fully broken down and absorbed, but rather turned into short-chain fatty acids by intestinal bacteria.

This may lead to some unique health benefits. To get the most from resistant starch, choose whole, unprocessed sources of carbohydrate such as whole grains, fruits, vegetables, and beans/legumes.

What makes a starch "resistant"?

All starches are composed of two types of polysaccharides: amylose and amylopectin.

Amylopectin is highly branched, leaving more surface area available for digestion. It's broken down quickly, which means it produces a larger rise in blood sugar (glucose) and subsequently, a large rise in insulin.

Amylose is a straight chain, which limits the amount of surface area exposed for digestion. This predominates in RS. Foods high in amylose are digested more slowly. They're less likely to spike blood glucose or insulin.

It's time to unleash your inner warrior!

Transcript (listen to the full podcast [here](#)):

Ameer: Hey Tim, how are you doing?

Tim: Good Ameer. Glad to be here.

Ameer: Cool. I'm happy you're here. The reason you're here is I did a podcast with Richard, it was like two months ago or something, and the feedback was crazy. We talked about resistant starch, the negatives, the positives, everything about it, so many things. What was really crazy was the feedback. I had figuratively over 60 emails about resistant starch. I'm like "Listen, I'm not the expert on resistant starch, this is fairly new to me." Richard right away reached out to me again and he mentioned you Tim and so that's why we're having this today. I'm just curious, how did you actually become aware of resistant starch in the first place?

Tim: Well, I was like a lot of people. I find myself in pretty bad health with metabolic syndrome and all that, and went to a low carb, paleo-type diet, lost a lot of weight, got off all my medicine and pretty much turned my metabolic syndrome around. Then, like a lot of other people, we get into that trap of low carb eating where you think low carb got you pretty far so lower carb and lower carbs is what you really need to progress, and I kept trying that and like a lot of other people fell into the same trap. My fasting blood glucose was going up, my sleep wasn't so great, cold hands, just the same thing that most low carbers fall into after a long period of time, you can't figure out why. At that point, it's like you keep thinking you still need to be low carb and lower carb and towards the end I was trying the ketogenic approach even and that was just terrible. I couldn't work out, I was so sore. I'd never experienced muscle soreness like I did when I tried ketogenic. So like you see, that wasn't working for me. A couple of years back I found the PerfectHealth Diet by Paul Jaminet and I read that. So I started adding the safe starches and gained a little bit of weight but it wasn't bad

because I wasn't overweight or anything. All through book I kept reading about resistant starch, Paul mentions the resistant starch in there, so it just get me into the rabbit hole of looking into resistant starch.

Ameer: So what have you found about resistant starch that kind of made you say "wow!"

Tim: Well, originally, I'd read everything I could and I find all these different articles about it and just kind of been New York Times-type articles and the people would mention a study that was done on people or animals or something and they'd say all these great things happened to these animals that were fed with resistant starch, and the conclusion of the articles would always be "So eat cold rice and cold potato salad." When you start digging into it, cold rice and cold potato salad don't really provide that much resistant starch, so I started really digging deep and going through the literature and finding some better sources of resistant starch like plantains, green bananas, and found ways to deal with rice and potatoes and even beans better to create a lot of resistant starch, but it wasn't until I came across actual raw potato starch, just the kind that you buy in the baking aisle, and that's what they were using in the studies. They were using these raw potato starch or raw corn starch, some specially-made corn starch, and one day I just saw a bag of this raw potato starch in the grocery store, and I was like "Hey, could that be what these guys are using in the studies," so I bought a bag of it and brought it home. I started asking around and looking on the internet, there's nobody you could turn to, to ask these questions because nobody knew. So I just started trying it. I just started looking at the dosage there is in any study which was like 40 grams a day which I figured was pretty close to 4 tablespoons, so I started adding that, just taking 4 tablespoons a day, and right away got a little bit grumbly in the stomach, some flatulence, but that went away in a few weeks and almost immediately, I was sleeping better, my fasting blood glucose dropped and it was like it was living right up to what the studies were saying and that's when I got a hold of Richard over at Free the Animal and we started talking about it there and it really took off from there. So yeah, it's been interesting.

Ameer: What is happening, the underlying mechanism. Let's clarify something. There are different variants of resistant starch right? There's like R1, R2, R3, and R4. What are we dealing with when we're having say cold potatoes or rice or what you mentioned, the potato starch. What resistant starch is that?

Tim: Yeah, in the potato starch, it has resistant starch #2 which is raw starch granules. When you take a raw potato, a potato is 20% starch by weight and the

starch that's in that potato is about 70 to 80% resistant starch, so you can easily extract almost four tablespoons of starch from one pound of potato. It's really easy to do, I've done it a lot of times at home just to see, because four tablespoons was kind of an unnatural amount, but four tablespoons is easily found in a big potato and probably with better extraction means like they do at the processing plant, they get all the starch out of there but you can easily get it out, so it's not an unnatural amount. But when you cook the starch, then it gels and turns into a different kind, it turns into readily digestible starch, when you cook that regular potato, so then there's no resistant starch left. That starch is made up of two types of starch, amylopectin and amylose, which are two different branches of starch, and as that potato cools down, when it hits about 50 degrees, the amylose starch molecules, they start to line up and they form crystals, and when they're completely cold, what happens is it's driving the water out and it forms a crystal structure and that's called resistant starch 3. It's a valid type of resistant starch.

Ameer: Now is that what is called retrogradation or something.

Tim: Yup, retrograde. The process of the moisture coming out and crystallizing, that's known as retrogradation of the starch, and that forms resistant starch. Like that same potato, like about a third of a pound of just regular potato, it may have 40 grams of resistant starch when it was raw. When you cook it and it's hot, now it probably has zero resistant starch in it, maybe 1 gram, ½ gram, but as you cool it down, almost toward the freezing point, then it's going to start building that retrograde starch back up, and so that same potato that had 40 grams of RS2 is going to have probably maybe 5 grams of RS3 once it's cooled down. So it's never going to get back up to those high levels as when it was raw, but you cool it down, it gets to about 5 grams of the retrograded starch, and then you can heat that back up and that actually drives more moisture out and forms little bit tighter bonds of that retrograded starch. So repeated heating and cooling cycles will actually increase the RS3 and a lot of commercial manufacturers use that trick with starches to create different types of starches that they can use in baking and stuff like that, but for home purposes, when you cook a potato or rice or beans, then cool it down. That first heating and cooling cycle is where most of the RS3 is formed, so there's no need to go through elaborate processes of heating and cooling because after that, you get really diminishing returns.

Ameer: What's going on in our body then when we eat resistant starch?

Tim: Okay. It's just about prebiotics. Prebiotics have been studied for a long time and it's food that gets to your large intestine that your gut bugs can eat. The term prebiotics was coined like in the 80s by a guy named Roberfroid, and he did a lot of studies with inulin and oligosaccharides and some other different types of prebiotics, and he was studying them. The problems that he had back then were that people were having a lot of flatulence issues with it. Back then, the only thing he had to experiment with was extracted inulin, and he never used potato starch in any of his studies. That kind of came later after his early experiments. But with potato starch is almost exactly what he was seeing with inulin back in the 80s. We were kind of running into the same problems that he did because there are a lot of people that can't digest the potato starch and they're getting flatulence that last forever, and they're getting bloated. Some people that have maybe arthritis or autoimmune diseases problems are getting some flare-ups for that. So we're thinking that it's awesome if you include a lot of the other fibers along with the potato starch because there are some symbiotic mechanisms going on there, and then also the probiotics are probably even more important than the prebiotics, because if you take some potato starch and you don't do well with it, that's indicating that you're missing some crucial gut bugs and got some problems that you need to work on. It's huge. It's a rabbit hole. We can talk for three hours of all the different things that it does but basically it's feeding your gut bugs and creating short-chain fatty acids, it's providing fuel for the cells that line your colon and is helping out your immune system. Yeah, we can talk about it forever.

Ameer: Can you explain to our audience what is short-chain fatty acids?

Tim: Short-chain fatty acids are, in the gut, the three main ones are propionate, acetate, and butyrate, and they're by-products of your gut microbes. As they eat the different foods that you give them, they produce these short-chain fatty acids, and they all seem to have different metabolic uses in the body, and they go into different pathways. It's important because it provides fuel for what's called colonocytes in your colon, and that's their preferred fuel. So when you're eating resistant starch or probiotics in general, you get the butyrate, and it sets up a condition in your gut that's favorable for other good gut microbes and is also fueling your colonocytes. In your colon cell walls, there are these kind of organs called Peyer's patches and they're a part of your immune system. When your colon is flooded with butyrate and the colonocytes are healthy, the Peyer's patches are healthy. In a colon like on a standard American diet or a western diet or ketogenic diet, your colon is kind of starved of all these fuel, and so everything,

you get inflammation in the colon, and things just aren't working the way they should. But if colon is properly fueled, it really starts to work good and it works for you.

Ameer: Now, say men didn't have the ability to create potato starch through processes. You mentioned earlier that plantains are a good source and you mentioned there's a symbiotic relationship with other fibers, can you give us a more detailed explanation about that?

Tim: Yeah sure. Potato starch isn't needed at all by anybody, that was just something that we came up with because it was being used in the studies and I wanted to see if I can recreate the studies by using potato starch as I was digging into the rabbit hole of resistant starch, and it worked really well for me. A lot of people can't stand it. There are some problems with it when they manufacture it, they use sulfur in the process to keep it pure white. Some people are really sensitive to sulfur. There are also people with night shade intolerances that just aren't going to use potato starch no matter what. That's no problem. There are lots of people who don't use potato starch but you can still get plenty of resistant starch. One of my favorites is plantains. Really big, ugly, green plantains. You can't peel them, you can't eat them, but you can take a knife and slice them in half and get the meat out and keep slicing down so they're about a quarter-inch thick and I lay them on a screen, and I dry them out, they turn into like a nice hard saltine cracker. Those plantains are probably way better than potato starch as far as a form of resistant starch because not only do they have resistant starch, but they have inulin and FOS, they have all three of the prebiotics in there. They also have some other good stuff, some micronutrients that's gone with potato starch. So I'd recommend, and I tell people all the time to eat dried plantains. Just the trouble is they're not that tasty and if you've taken a bite of a raw plantain before it's dry, you'll never try it again because they're really bad. But the dry plantains especially right when you first cut them, they're kind of sweating up some moisture, you could put salt on there. They're just like saltine crackers. I make a big bag of them at one time and munch on for weeks and there's not that much trouble.

Ameer: Now it's funny you said that though. I know in Jamaica, anyone who has like constipation issues or gut issues, they actually feed them raw plantains.

Tim: Yeah. Plantains are good. One thing with the raw starch granules, and this is with the plantain starch, corn starch, rice starch, potato starch, they'll actually attract microbes and they're used for like in cholera treatment where they call it oral rehydration therapy, is they give them raw starch in the color of pathogen

that's in there small intestine. It will leave the small intestine and cling to the raw starch granule and get passed out and then pushed out of the large intestine through all the diarrhea that's going on and they get over the cholera way faster. It's a good treatment for diarrhea and I think it's good for a lot of things like people with small intestine or bacterial overgrowth. This is just kind of my theory but I think eating raw starch, the plantains or the raw potato starch probably helps mop that stuff out of your small intestine along the way.

Ameer: Probably, maybe has a connection with like the biofilm inside over there.

Tim: Yup. A lot of people have been talking about that.

Ameer: Yeah, I'm curious. You said earlier that as soon as you started implementing potato starch that your blood sugar levels are controlled much better. Have you found the connection between consuming potato starch and how does it actually control your blood sugar?

Tim: Well. Blood sugar is pretty well tied to gut microbes. There's a big connection with diabetes and gut microbes. I think when you're on a low carb diet for a long time, your gut microbes start to lack diversity, so the ones that you rely on to help control your blood sugar though whatever mechanism, start to get ripe. As soon as I think most people, because one thing that is neat about the potato starch is it's a big source of butyrate for your gut bugs, and most people have never had that before. I know I never had. I grew up on a standard American diet and I did a really bad job at that and let it get way out of hand, and then I went to paleo diet and low carb and lower and lower and lower carb. When I first took a few spoonful of potato starch, that stuff was just like instant butyrate in my colon and it was like, it was lucky for me I had the right gut bugs that were able to turn it into butyrate. I don't know that everybody does, there are some people that are lacking.

Ameer: There's a funny theory though behind that. I have a couple of beefs with the keto world, the paleo world, high carb. My problem with them is most people are black and white. They view either this way or that way, either door A or door B. When I look at nature, I don't care where the hell you're living, there's seasonal changes and the availability of foods. That means sometimes I have more abundance of high carb foods and I eat like a king, other times I don't. It's simple as that. And this whole idea of all-year round eating the same type of food, personally I think it's kind of idiotic. I think the more variety that you can implement in your diet, the healthier your gut microbes are.

Tim: Yup. I agree 100% with that. I was just telling somebody this morning. When I was a kid growing up on the farm, my grandfather every spring, the first things that would pop up were dandelions out in the lawn and he'd go out and pick those and make a big salad of them. And he'd try to get us kids to eat them. I don't know if you've ever eaten dandelion greens but they are bitter. They don't taste that good. But he grew up and that's what you did in the spring and when you look at a list of inulin, dandelions are one of the highest inulin-containing plants that there are, so I suppose, there's probably lots of societies and cultures that in the spring of the year, they went out, got all these high inulin plants or whatever which is good prebiotics and kind of tuned up their gut bugs in the spring that way. Yeah, I agree with you.

Ameer: What will be some classic signs and symptoms for somebody that may benefit from resistant starch? Maybe they've tried low carb for X amount of time and they're just not feeling well. Is there any classic signs and symptoms because you mentioned through a period that you were trying to lose more weight, and you figured that going low carb would equal out to more weight but that didn't work out. If someone is listening to us out there that is currently in your situation that you were before, are there any signs and symptoms that people can look out for?

Tim: If somebody has any autoimmune diseases and there is a list as long as my arm of what they are. Hashimoto's, diabetes, arthritis. There's probably a couple dozen of them at least that are tied to the gut. If you have the autoimmune diseases or any type of gut dysbiosis, if you have chronic diarrhea, constipation, irritable bowel syndrome, GERD, I think you're going to need to work on your gut. Whether just starting to take resistant starch is the answer is probably not going to be as simple as that. You need to work on what's in your gut, find out what the real problems area, but if you don't have big overt symptoms of gut problems like that, just for the average person who's kind of maybe like me, turned around metabolic syndrome through diet and exercise, and now you're just kind of languishing, you hit a wall at the gym and you're just kind of maintaining, and if you track your blood sugar, your blood sugars just kind of in the 110-120 range and you're not real happy with that, you're not sleeping too good. With me it was really strange. I'd find myself waking at 3 in the morning and couldn't figure out why. That's a common occurrence when you see on the low carb and paleo blogs. Just like, people are always asking that they're having trouble sleeping and they get the cold hands and cold feet. Those type of things just kind of the common pitfalls of low carb dieting I guess. If you start running into those, I think. If you're

pretty healthy otherwise, you don't have big gut problems, just start eating some resistant starch-rich food. You don't have to go straight for the potato starch with the dried plantains, cooking and cooling your potatoes or rice ahead of time, adding some beans to your diet. I think that goes a long way toward getting your gut healthy again.

Ameer: It's interesting though. This whole sleep thing you mentioned about people waking up at 3. If you look up traditional Chinese medicine, they say usually 3 a.m. is the liver issues. I've looked over give or take more than 100 ASIs, adrenal stress index profiles and I've seen inverted cortisol rhythm on a lot of people who have sleep issues at night, then you have to wonder, when you have for example carbs at dinnertime, say resistant starch, maybe some potatoes, maybe plantain or beans, whatever you're having, you have a deeper sleep. The question is why. I've noticed a lot of people on low carb, they may be deficient in potassium, so you get more potassium within the carbs of resistant starch, and I'm trying to figure out what other mechanisms could there be to actually make a deeper sleep.

Tim: Yeah, there's been a lot of people getting into that rabbit hole on different forums and blogs that I go on, and there's actually a lot of smart people trying to figure that exact same thing out. Somebody mentioned recently, I think it was the propionate that's been produced by your gut bugs is used in some of those same pathways that regulate sleep. Really, I think it's just, once your gut microbiome is working right, things just start falling into place for you. The chemicals and all the nutrients that you need to absorb that you're normally not absorbing good, like you said when we eat carbs before dinner that things are supposed to happen when you are asleep. If you don't have the right gut microbiome and the gut makeup, then those things maybe just start happening right and you're getting into those cortisol releases in appropriate times at night, and it's also to drive up your fasting blood glucose in the morning, when you check it it's high. I don't know, I'm not an expert on that but there is a lot people that are really interested in that because one of the first things that almost everybody said when they started with the resistant starch was that how they slept better and they were having crazy, vivid dreams. That's just been repeated over and over so many times so there's got to be something to it. Exactly what it is, I can't tell you.

Ameer: Yeah, it's interesting. Probably some neurotransmitter connection with the gut bacteria. Other than that though, I think it just goes back to the original

point that I was trying to make is, I think people are too extremists on different levels. You're eating this one type of diet for X amount of time for maybe the rest of your life, and there's not enough variations. And even within that diet, maybe it's a good diet, it's just you don't, there's not enough variety I think over here in the west. If we're comparing like what for example we had to access as true agriculture, we had access to a variety of foods. You go to any local like grocery stores. Forget farmer's market, just grocery stores. Broccoli, spinach, leek, it's like four or five choices of some vegetables and that's it. That's all you got. I'm like, "There's all there is in the world, four or five vegetables? Are you kidding me?" There are probably hundreds of different vegetables out there and hundreds of different types of fruits out there, and I think the more variations we have in our diet, the healthier we become. Going back to the whole resistant starch, say somebody wants to start playing around with retrograding, what would be the best approach for that?

Tim: Well, what I've come up with on that, and I like the retrograded starches and I figure I can probably get easily 20 grams a day of retrograded starch just from food. What I do is I precook a bunch of potatoes, like I'll take about five pounds of potatoes, peel them or not, boil them, and then cool them down and put them in ziplock bags in the refrigerator and just let them sit there. I'll do the same thing, I'll make a whole rice cooker full of rice, I'll divide that up into ziplock bags, put those into the freezer, and same with like I'll take pinto beans, black beans or red beans, and before I cook them, I like to ferment them. We cover them with water, sit them on the counter at room temperature for about a day and a half, two days, they start to bubble up and that actually, that fermentation process does a lot to the beans, it's getting rid of a lot of the antinutrients that is turning soluble fiber into insoluble, releasing some of the resistant starch and all that, does a lot to them. I'm not sure how you feel about beans but it makes the beans pretty healthy. So I cook up a whole batch of beans and same thing I'll put those into ziplock bags, put them into freezer. Then now, throughout the week, when I want some starch with my meal, I'll just dump out some of the already cooked rice and beans and the potatoes that's already cooked. It actually makes meal times a lot easier. You can get all the resistant starch that you need from eating like that. Then I make the dried plantains and those are kind of my snacks throughout the day, and yeah, that's plenty. The resistant starch, what I like about that, especially the potato starch, is like I keep a jar of it on my counter, and days when you're in a hurry, like maybe you go out to eat dinner in a restaurant. Go out to a restaurant and look at the starch that you get with our meal, it's pretty crap. You get like a little pile of potatoes cooked in vegetable oil or whatever, or a

little thing of rice cooked in vegetable oil. I just hate eating that so usually end up when I go out to a restaurant, I'll get some kind of meat in a big salad and eat it without dressing and I'm happy with that at a restaurant but that day I didn't get hardly any starch so maybe that night I'll have a soup of potato starch and a couple yogurt when I get home just to kind of keep things normalized there.

Ameer: Are you eating resistant starch every single day?

Tim: I get it from real food every single day. I don't take potato starch every single day. There's quite a few people that are, and I think that kind of goes by how bad your gut is. The people that are working through some gut issues probably want to take some everyday just to make sure that they're getting that 40 grams or so a day that you really need, but once you start evolving into where you can cook your food and get a lot of resistant starch from your food, I don't think you need to supplement with potato starch everyday.

Ameer: I'm curious if we did a test, if we did like a one month test where a person goes from a ketogenic diet, that means keto-adapted, does resistant starch but we measure blood ketone levels, hydroxybutyrate in the morning as well as night time and we also take blood glucose levels alongside with it. I'm wondering how that type of combination, more like low carb, ketogenic/having a little bit resistant starch. I wonder how that would benefit people. It's an interesting mix.

Tim: Yeah, that would be interesting. There's quite a few people doing studies like that Eventually. Steve Cooksey at The Diabetic Warrior, he's been doing some pretty good tests with resistant starch and measuring his blood glucose. I don't know if you kept up with him but he's been showing some really good things. He's a diabetic and taking potato starch and then measuring his glucose. He's finding it's even helping him with insulin sensitivity like after he exercises, his glucose returns to normal better. Also, Jeff Leach at the American Gut Project, you know him, he's also running like a year's worth of testing Eventually, testing his gut microbiomes with different diets throughout the year, and we got a bunch of people really badgering him to add some resistant starch to one of his tests. I did some tests like that on my own about a few months after I started the high resistant starch, I did an American Gut Project sample, and it came back really good. I had really high bifidobacteria counts which were 13 times what anybody else had. It's like 13% of my total gut microbiome was bifidobacteria and normal people has like 1% or less, hardly anybody has it. Actually, just yesterday, I did another test, the Metamatrix, the GI effects.

Ameer: GI effects comprehensive PCR, yeah.

Tim: Yeah, I did the 2200-GI effects, I just sent it off today. But for the last couple of weeks, I've been eating, everyday I've been supplementing with inulin and potato starch and some, they call it large AG or arabinogalactan. I've been doing some of these real high prebiotic supplements just for the last month and then I sent off that test, I want to see what it comes back, if it's comparable to just potato starch alone. There's a lot of people interested and so many variations of studies that people would be interested in, but probably like what you're saying, with the blood glucose testing and all the other, like the hunger hormones, GLP-1 and PYY, there are 30 years of studies on that out there. If you just type in on Google your search terms, you'll probably going to find 10 studies that have already been done with resistant starch and those hormones.

Ameer: It's interesting because I've been following Kiefer, this guy called John Kiefer, he does carb backloading where he talks about the benefits of just having carbs at night time opposed to having them during the day. I'm really, really interested to see how someone would approach that and really quantify. It's one thing to say I feel good, that's cool. Obviously we're all different, we all have different unique gut microbes. That's why different diets work for different people, simple as that. Now, to really quantify to see like okay this is a low carb approach, very like anti-inflammatory meal but at nighttime, you're having your RS. Like you're going to town, you're in Las Vegas doing whatever you want, and I'm really curious to see the biomarkers of that individual in a month. That would be something really, really cool to really like witness.

Tim: Yeah, I'm curious too. I think probably what you'd find is if you had a hundred people doing that, you'd find probably 75% of them would have improved markers, you'd find about 25% wouldn't change at all, and you'd probably have a few that maybe had some worse markers and a lot of that all comes back to the gut biome that they have to begin with.

Ameer: Now, what's your take on gut biome? Why do you think most of us are having compromised gut bacteria? Are most of us born that way or is it through our lifestyle choices that our gut bacteria is like that?

Tim: Yeah, it's a little bit of a combination of all those really. I think most babies are born with a pretty good microbiome to begin with and especially if they're breastfed, they get a good start in life. Then they hit about three or four years old and things start to change. By then, they've been through several rounds of

antibiotics. My son had ear problems from almost the time he was born and he was allergic to milk so we raised him on soy formula, and had ear infections and antibiotics, basically from the time he was born until the time he was 6 or 7, he was on antibiotics pretty much all the time. That just starts the person out on the wrong foot as far as gut bugs are concerned. And then you live in a life where you're eating sterilized vegetables. You get at home, you wash everything, you use antibacterial hand soap to clean your hands, and you just disconnected from the normal microbes that men were evolved around. But I think, gut microbiomes are pretty resilient on their own, and they do tend to bounce back after antibiotics. I've seen some studies where it could take up to four years to return to a baseline gutmicrobiome profile. Everything you mentioned is in there. We're living in tough times for gut bugs Eventually.

Ameer: Honestly, to make things simple for most people, I tell them this. This is the formula for success. Number one, get good sleep. Number two, eat seasonally. Eat local, eat seasonally, eat a variety of different foods, and cook your own food. Don't go out there to restaurants. Number three, stop stressing out. People are too anal of those small things. The exact gram of food you got to eat, the exact macros and micros, I'm like "Listen, we're not robots." Chill out, relax, enjoy yourself. And I think we're so consumed with this type of ideology of paleo diet, keto diet, whatever diet you're on, and you become this diet. Well, you're not a diet, you're a human being. If you look at evolution, it's not the survival of the smartest or the strongest, that's not the case. It's the survival of the most adaptable. How do you adapt to your environment. It's simple as that. If you're not playing that game, well I'm sorry to say but buh-bye. That's the name of the game, and I think if more people just sit back, relax and just really chill out and take it one step at a time, I think more people will see a huge benefit in their life.

Tim: Yup. Well yeah, you know, I agree with all that. I haven't counted calories, I haven't counted carbs or any kind of grams in years. I even stopped weighing myself and things got a lot easier when you start doing that. And you look at different markers like how you feel when you're exercising, how you're pants are fitting, and yeah, I think getting rid of that stress helps a lot, but one thing is with gut microbes, just eating normally, you kind of tend to neglect them, and you really do need to think a little bit harder about the food that you're giving your gut microbes, and with just a few simple tweaks like we talked about with the potatoes and rice, cooking them and cooling them ahead of time, making some dried plantains and maybe even eating a slice of raw potato every once in a while, that provides some food to the gut microbes that they normally wouldn't get.

What's funny on that is the standard western diet actually provides more food to your gut flora than a low carb paleo or ketogenic diet does because they're all eating wheat and wheat actually has a lot of inulin and there's resistant starch in that. It's funny when people switch from the SAD diet to a paleo type diet, they're actually feeding their gut microbes less.

Ameer: It's interesting yeah. They might be feeding it less, at the same time though eliminating a lot of poisonous foods too.

Tim: Yeah, I'm not saying it's good. I don't think wheat should be eaten by anybody.

Ameer: Especially the wheat today. The wheat today is just horrendous.

Tim: I think wheat is just terrible but it's just that that's main source of gut microbe food in the standard American diet. I'm not saying yeah, I'm not sticking up for that at all.

Ameer: I say pass me the beans and potatoes, I'm good to go. Look at the Irish.

Tim: Yup.

Ameer: Alright Tim, if you had to summarize, what would be your number one optimal health tip that you can give somebody. If you have to just summarize everything you know Eventually and you have Figuratively 30 seconds.

Tim: Yeah. Give a lot of thought to your gut bugs. We evolved with them for over millions and millions of year, they were there for us, and then it's just kind of during the last 10,000 years we started neglecting them, our diet changed and we got away from eating dirt and playing in the dirt, and we're living too much of a sterilized diet, so you're going to have to start feeding your gut bugs, the food that they were evolved to eat, and a few minor tweaks in your food, you can do that. If you need some potato starch to supplement, that's always available, and there's some good probiotics on the market to even help things along there too.

Ameer: Sweet. Where can people find more information about you?

Tim: Mostly I've been working with Richard Nikoley on Free the Animal, and then also on Animal Farm with Dr. BG. She's been instrumental in all these. So in her blog and on Richard's blog, there's a lot written on resistant starch and probiotics and gut microbes and all that. The whole thing has kind of evolved away from RS to the whole gut health thing. Our RS was just the beginning for us and once we

saw that it did have a big impact on gut health, we kind of evolved our thinking away from just RS into the whole gut health arena.

Ameer: Awesome. Well, Tim. Thank you so much for coming on the Optimal Health Show. I know we're going to have a lot of questions after this show so we're probably going to have round three. Maybe you and Richard can come, we can do a melee. Until then, my friend, have an awesome day.

Tim: Okay great. Thanks for having me.

Ameer: Alright buh-bye.



Ameer Rosic

Ameer Rosic is obsessed with health. A Registered Holistic Nutritionist, Functional Diagnostic Practitioner and Functional Medicine Practitioner, Ameer has spent years empowering himself with knowledge about optimal health, and now his passion is to share that with you! From interviews with top health experts to fitness and nutritional advice and more, Ameer Rosic can help you live a life of optimal health!

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